

Chapter 10

Alternatives to Take Considered and Rejected

This chapter describes, in table format, the alternatives to take of each federally listed species that was considered and rejected. Take is discussed for the following species:

- San Joaquin kit fox,
- riparian brush rabbit,
- giant garter snake,
- Central Valley spring-run Chinook salmon,
- Sacramento River winter-run Chinook salmon,
- Central Valley steelhead,
- delta smelt,
- southern Oregon/northern California Coho salmon—Trinity River, and
- VELB.

This chapter evaluates only those alternatives to take for the SDIP components that were considered and explains why they were rejected. Table 10-1 identifies:

- federally listed or proposed ASIP-covered species affected by the SDIP,
- actions that would result in take,
- alternatives to take that were considered but rejected, and
- impacts of alternatives to take and reasons for rejection.

Table 10-1. Alternatives to Take Considered and Rejected for Federally Listed and Proposed ASIP-Covered Species

Federally Listed or Proposed Species	Actions That Could Result in Take ¹	Description of Take	Alternatives to Take Considered and Rejected ²	Impacts on ASIP-Covered Species Not Implementing the Action	Impacts of Alternatives to Take on SDIP and Reason for Rejection
San Joaquin kit fox	Old River at DMC gate construction	Loss of dens and foraging habitat	Do not construct a permanent gate on Old River at DMC	Not constructing a permanent gate would eliminate temporary and permanent habitat impacts and temporary disturbance associated with construction.	Absence of a gate on Old River would result in water surface elevations that would not support agricultural diversions for the South Delta Water Agency to meet consumptive use needs within its boundaries. Project purpose would not be met.
			Continue to implement temporary barriers program	Annual installation and removal of temporary barriers result in recurring environmental effects and levels of take that may exceed take associated with permanent gates.	Absence of a permanent gate on Old River would result in water surface elevations that would not support agricultural diversions for the South Delta Water Agency to meet consumptive use needs within its boundaries. Project purpose would not be met.
			Relocate gate to a different location that will not affect kit fox habitat	Kit fox may occur in vicinity of Old River; therefore, relocating the gate to a different location on Old River will not result in less potential for take of kit fox.	Location of proposed gates was selected to be most efficient location to meet its operational objectives. Placement of gate in an alternate location would not satisfy objectives for its operation and would result in additional disturbance to a section of channel that is not currently disturbed by construction and operation of existing temporary barrier.
	Old River dredging and dredge spoil placement	Loss of dens and foraging habitat	Do not implement channel dredging component of project	Not implanting channel dredging would eliminate the temporary habitat disturbance associated with dredging.	Channel dredging is required to maintain and improve channel conveyance and operation of agricultural siphons and pumps. There are no practical alternative methods for achieving this project objective.

Table 10-1. Continued

Federally Listed or Proposed Species	Actions That Could Result in Take ¹	Description of Take	Alternatives to Take Considered and Rejected ²	Impacts on ASIP-Covered Species Not Implementing the Action	Impacts of Alternatives to Take on SDIP and Reason for Rejection
Giant garter snake	Gate construction	Loss of breeding habitat, foraging habitat, and hibernacula	Do not construct gates	Not constructing permanent gates would eliminate temporary and permanent habitat impacts and temporary disturbance associated with gate construction.	Absence of a gate on Old River would result in water surface elevations that would not support agricultural diversions for the South Delta Water Agency to meet consumptive use needs within its boundaries. Without a gate at head of Old River, juvenile Chinook salmon would not be directed down San Joaquin River. Project purpose would not be met.
			Continue to implement temporary barriers program	Annual installation and removal of temporary barriers result in recurring environmental effects and levels of take that may exceed take associated with permanent gates.	Absence of permanent gates would result in water surface elevations that would not support agricultural diversions for the South Delta Water Agency to meet consumptive use needs within its boundaries. Project purpose would not be met.
			Relocate gate to a different location that will not affect giant garter snake habitat	Giant garter snake may occur on land side of levees throughout SDIP study area. Relocation of gates would not result in a decreased potential for take.	Location of proposed gates was selected to be most efficient location to meet its operational objectives. Placement of gate in an alternate location would not satisfy objectives for its operation and would result in additional disturbance to a section of channel that is not currently disturbed by construction and operation of existing temporary barrier.
	Dredging and dredge spoil placement	Loss of breeding habitat, foraging habitat, and hibernacula	Do not implement channel dredging component of project	Not implementing channel dredging would eliminate temporary habitat disturbance associated with dredging.	Channel dredging is required to maintain and improve channel conveyance and operation of agricultural siphons and pumps. There are no practical alternative methods for achieving this project objective.

Table 10-1. Continued

Federally Listed or Proposed Species	Actions That Could Result in Take ¹	Description of Take	Alternatives to Take Considered and Rejected ²	Impacts on ASIP-Covered Species Not Implementing the Action	Impacts of Alternatives to Take on SDIP and Reason for Rejection
Central Valley spring-run Chinook salmon Sacramento River winter-run Chinook salmon Central Valley steelhead Delta smelt Green sturgeon	Gate construction	Loss of habitat Introduction of contaminants to Delta channels Direct injury	Do not construct gates	Not constructing permanent gates would eliminate temporary and permanent habitat impacts and temporary disturbance associated with gate construction.	Absence of gates would result in water surface elevations that would not support agricultural diversions for the South Delta Water Agency to meet consumptive use needs within its boundaries. Without a gate at head of Old River, juvenile Chinook salmon would not be directed down the San Joaquin River. Project purpose would not be met.
			Continue to implement temporary barriers program	Annual installation and removal of temporary barriers result in recurring environmental effects and levels of take that may exceed take associated with permanent gates.	Absence of permanent gates would result in water surface elevations that would not support agricultural diversions for South Delta Water Agency to meet consumptive use needs within its boundaries. Project purpose would not be met.
			Relocate gates to different locations that will not affect listed fish species	Covered fish species may occur throughout study area; therefore, relocating gates to different locations will not result in less potential for take.	Location of proposed gates was selected to be most efficient location to meet its operational objectives. Placement of gate in an alternate location would not satisfy objectives for its operation and would result in additional disturbance to a section of channel that is not currently disturbed by construction and operation of existing temporary barrier.

Table 10-1. Continued

Federally Listed or Proposed Species	Actions That Could Result in Take ¹	Description of Take	Alternatives to Take Considered and Rejected ²	Impacts on ASIP-Covered Species Not Implementing the Action	Impacts of Alternatives to Take on SDIP and Reason for Rejection
	Dredging	Loss of habitat Introduction of contaminants to Delta channels Direct injury	Do not implement channel dredging component of project	Not implanting channel dredging would eliminate the temporary habitat disturbance associated with dredging.	Channel dredging is required to maintain and improve channel conveyance and operation of agricultural siphons and pumps. There are no practical alternative methods for achieving this project objective.
Southern Oregon/northern California coho salmon—Trinity River	None	NA	NA	NA	NA
Valley elderberry longhorn beetle (VELB)	Gate construction	Loss of elderberry shrubs and associated habitat	Do not construct gates	Not constructing permanent gates would eliminate temporary and permanent habitat impacts and temporary disturbance associated with gate construction.	Absence of permanent gates would result in water surface elevations that would not support agricultural diversions for South Delta Water Agency to meet consumptive use needs within its boundaries. Without a gate at head of Old River, juvenile Chinook salmon would not be directed down San Joaquin River. Project purpose would not be met.
			Continue to implement temporary barriers program	Annual installation and removal of temporary barriers result in recurring environmental effects and levels of take that may exceed take associated with permanent gates.	Absence of permanent gates would result in water surface elevations that would not support agricultural diversions for South Delta Water Agency to meet consumptive use needs within its boundaries. Project purpose would not be met.

Table 10-1. Continued

Federally Listed or Proposed Species	Actions That Could Result in Take ¹	Description of Take	Alternatives to Take Considered and Rejected ²	Impacts on ASIP-Covered Species Not Implementing the Action	Impacts of Alternatives to Take on SDIP and Reason for Rejection
			Relocate gate to a location that will not affect VELB	Elderberry shrubs do not occur at proposed gate sites. It is unknown whether elderberry shrubs would be present at a different location.	Location of proposed gates was selected to be most efficient location to meet its operational objectives. Placement of gate in an alternate location would not satisfy objectives for its operation and would result in additional disturbance to a section of channel that is not currently disturbed by construction and operation of existing temporary barrier.
	Dredging and dredge spoil placement	Loss of elderberry shrubs and associated habitat	Do not implement channel dredging component of project	Not implanting channel dredging would eliminate the temporary habitat disturbance associated with dredging.	Channel dredging is required to maintain and improve channel conveyance and operation of agricultural siphons and pumps. There are no practical alternative methods for achieving this project objective.
<p>NA = not applicable. DMC = Delta-Mendota Canal.</p> <p>¹ No alternatives to take were identified if conservation measures would avoid impacts to the species.</p> <p>² Refer to Chapter 2, "Project Description," for detailed information on the project alternatives.</p>					